

Chronic Poverty: A Review of Current Quantitative Evidence

Andrew McKay, April 2002
David Lawson*

**School of Economics
University of Nottingham
School of Economics
University Park
Nottingham
NG7 2RD**

CPRC Working Paper No 15

Chronic Poverty Research Centre
ISBN Number: 1-904049-14-1

* We gratefully acknowledge helpful comments and suggestions from Andrew Shepherd, as well as from participants in the Chronic Poverty Research Centre Annual Conference, Buxton, February 2001, and the Development Studies Association Conference, Manchester, September 2001. We accept full responsibility for any remaining shortcomings in this paper.

1 Introduction

Measures of living conditions at a point in time do not necessarily provide a good indicator of their likely stability over time. This matters more for some dimensions of living conditions than others. For small-scale farming households, their agricultural income (or output) may be particularly volatile from one year to the next depending on various factors including weather conditions or crop infestations. A child may currently be attending school, but that does not guarantee that she will not drop out before completing her studies, or even still be at school next year. But for some other aspects of living conditions this applies less. One example is literacy status; the fact that an adult is literate now is generally a reliable indication of future literacy status. Similar points apply to other dimensions of living conditions.

Country case studies of poverty at a point in time provide very valuable information on its nature, characteristics and distribution, information which is useful for policy purposes. But given the fluctuating aspects of many dimensions of poverty (such as school attendance, nutritional status or income), this snapshot at a point in time will be unable to capture the dynamics of these dimensions. Thus it is not possible from this to know how much mobility into and out of poverty is in fact occurring, and its converse – that is how many of the poor are suffering persistent or long term deprivation, in other words the extent of transient and chronic poverty respectively.

This distinction between transient and chronic poverty is analogous to the distinction between short term and long term unemployment and matters for the same reasons. For a given rate of unemployment, if the vast majority is made up of short term unemployment then unemployment is mostly associated with movements between jobs. But if the vast majority is long term unemployment, in other words there is limited mobility in or out of unemployment, then the situation of those unemployed is more severe (especially as long term unemployment will often lead to deskilling). Different policy responses are likely to be appropriate in each case, and policy action is more crucial in the latter case. In the case of poverty, chronic poverty is a more serious situation than transient poverty, its causes are likely to be different, as are the appropriate policy responses. An effective policy response is likely to require knowledge of the relative importance of chronic as opposed to transient poverty, and appropriate policy measures directed at each.

This paper reviews existing evidence on chronic and transient poverty based on quantitative studies. A first issue is to consider available evidence on the relative importance of these two forms of poverty. But it is also important to the characteristics of those affected by each type of poverty, to give some indication as to likely underlying factors. This can also be supplemented by information on the factors associated with poverty transitions, that is movements into and out of poverty (which may help in understanding why the chronic poor do not make these transitions). All this can help inform appropriate responses to chronic and transient poverty.

The paper is structured as follows. The next section addresses the issue of defining chronic and transient poverty, setting out the various difficulties that arise in practice and discussing data sources. Analysis of chronic and transient poverty is generally based on longitudinal or panel data sets; section 3 reviews evidence from a number of countries on the extent and nature of chronic and transient poverty based on such data sets, as well as the factors associated with transitions. Section 4 discusses the options for

assessing the extent and nature of chronic poverty in situations where standard longitudinal data sets are not available. Section 5 concludes, including identifying some priorities for future research.

2 Concepts and Measures of Chronic Poverty

The defining feature of chronic poverty is its extended duration (Hulme, Shepherd and Moore, 2001). Thus while many move into and out of poverty over time (the transient poor), the chronic poor suffer persistent deprivation. This chronic poverty may also be severe (in terms of depth) or the deprivation may be multidimensional in nature. However, as this has not yet been sufficiently demonstrated by empirical evidence, for now these can be considered more as characteristics (which may or may not always apply) than defining features of chronic poverty.

By their nature, the concepts of chronic and transient poverty relate to the dynamics of poverty. To make this distinction will require either:

- (i) longitudinal or panel data, where observations on the living conditions of the same individuals or households are made at several points in time; or
- (ii) information that captures dynamic aspects of living conditions even by just observing at one point in time – such as retrospective questions or life histories, or one time indicators that have implications for duration, such as illiteracy or stunting.

The former approach has been widely used in quantitative discussions of chronic and transient poverty, generally based on survey data. To date such analysis has focused mostly on monetary measures of living standards. This is partly because these are among the measures that can fluctuate most over even quite short time periods (within and between years). Their measurement at a single point in time clearly fails to capture this dynamics. But the chronic-transient distinction is relevant for other several other dimensions of deprivation as well, for instance malnutrition (aspects of which, such as weight-for-height, can also fluctuate significantly in the short term), and the necessary data often is available, even if it has not been widely used for this purpose.

Approach (ii) can be an equally valuable means of understanding poverty dynamics, and may offer many advantages, such as its ability to look over longer time horizons. However, this has been much less commonly applied in looking at quantitative aspects of chronic poverty. There is scope for much greater consideration of chronic poverty based on such information, and it offers the advantage that it will not be affected by short term fluctuations.

This section discusses measurement of chronic and transient poverty based on panel data (approach (i)); options in the absence of panel data are discussed in section 4, along with the conclusions that can be drawn in such instances.

2.1 Panel data sets and their limitations

Given its quantitative focus, and the nature of existing work, this paper mainly discusses analysis based on panel data. Most such studies examining chronic and transient poverty have focused on income or consumption based measures of poverty, where this of course requires that comparable income or consumption information on the same

households or individuals is available at two or more points in time. For this panel data is indeed required to capture poverty dynamics properly. Repeated cross sectional surveys, where the sample surveyed differs from one round to the next, can tell us about net changes in poverty for a particular group (or a cohort, which may be defined according to different criteria), but do not provide any information on the extent of movements into and out of poverty between the different rounds. In Uganda for instance the poverty headcount fell from 55.5% of the population in 1992/92 to 35.1% in 1999/2000 (Appleton, 2001), a decline of 20.4 percentage points. However, an examination of those households that were in the panel between these two rounds, among whom the decline was 17.5%, shows that between these years 29.2% of households moved out of poverty and 11.7% moved in – in other words there was substantial mobility (Deininger and Okidi, 2002).

In fact only a relatively limited number of panel data sets suitable for poverty analysis have been collected, in large measure because of the practical difficulties they involve and also due to insufficient demand to date for such data. Where panel data have been collected, the period over which they are collected, the number of waves in the panel, the sample size and their geographic coverage all vary from case to case. Some examples of panel data collected in developing or transition countries that have been used for poverty analysis are presented in Table 1. Some of these panel data sets are nationally representative (e.g. the case of Côte d'Ivoire), while others relate to specific localities of the country (e.g. Pakistan).

In most cases the repeat visits to households and their members are made a few years apart (often three to five) and there are relatively few rounds. But other cases have involved frequent repeat visits (e.g. Zimbabwe), sometimes in adjacent years (the ICRISAT panel in rural South India). Other panels though involve several visits all within the same year (e.g. Rwanda). An intra-year panel is also valuable for looking at chronic poverty in that the chronic/transient distinction can also be relevant to intra-year variations, especially where seasonal variations are important. This though is a rather different concept of chronic poverty from that considered elsewhere in this paper, and will not be considered in depth here except where it offers important methodological lessons. Finally in a very few instances the time horizon over which panel data are collected may be sufficient to look at intergenerational variations (e.g. Chile).

Table 1: Instances of panel data sets that have been used in studying chronic poverty

Country	Number of waves and time covered	Number of observations in panel
Chile (eight rural communities)	2 waves, 1968 to 1986	146 households
China (rural)	6 waves, 1985 to 1990	5854 households
Cote d'Ivoire (national)	2 waves in each of 3 panels between 1985 and 1988	Around 700 households each panel
Ethiopia (specific rural locations)	2 waves, 1994 to 1995	1411 households
Hungary	6 waves, 1992 to 1997	2600 households
India (NCAER)	3 waves, 1968 – 1971	4118 households
India (ICRISAT; rural locations in Andhra Pradesh and Maharashtra)	9 waves, 1975 to 1984	170 households
Pakistan (IFPRI survey; specific rural locations)	5 waves, 1986 to 1991	686 households
Peru	3 waves, 1991 to 1996	676 households
Poland	2 waves, 1993 and 1996	5000 households
Rwanda	4 quarters, in 1982/83	270 households
South Africa (KwaZulu Natal)	2 waves, 1993 to 1998	1200 households
Zimbabwe (specific resettlement sites)	4 waves, 1992 to 1996	385 households

Panel data are a good way of looking at intertemporal variations in living conditions of individual households and their members in ways that cannot be achieved by repeated cross section surveys¹. But equally they suffer from various limitations that need to be considered carefully. The impact of measurement error in looking at individual or household-level variations between two rounds can be considerable (Grosh and Glewwe, 2000, chapter 23). In addition, because the individual or household has been surveyed in the same context before, the dynamics of a second interview may differ significantly from the first; thus data quality may improve or deteriorate between the two interviews, an issue which is particularly serious when looking at changes. An extreme instance of this may be where the household refuses to co-operate the second time around, meaning that longitudinal information is not available for that household.

This last case is a specific instance of the more general problem of attrition, which can also arise for other reasons, notably because a household may have moved away and so cannot be found or followed up, or may no longer exist (following death, household breakup etc.). In such cases a panel observation is lost (in particular it is not correct to replace the household by the one now occupying the dwelling). This attrition matters for analytic purposes because the households that remain in the panel are liable to be systematically different from those that dropped out. Thus some of those that dropped

¹ While cohort analysis (analysis of groups) based on repeated cross sections is also valuable, it can only provide information on the cohorts identified as a whole, and not on individual households or people within the cohort.

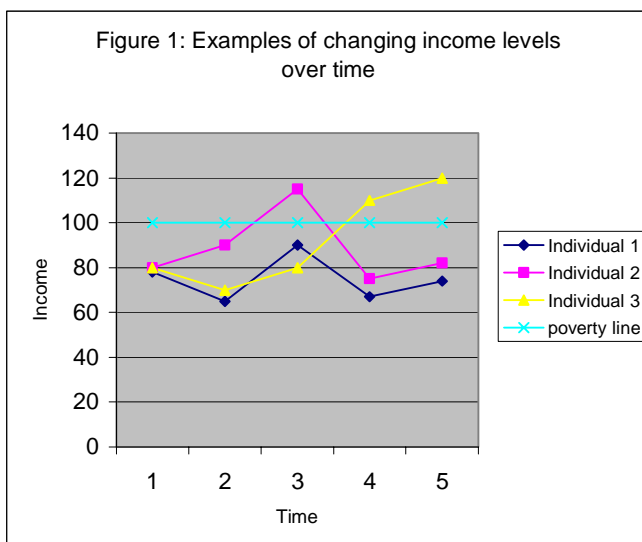
out may have been more economically dynamic, which may have led them to move to pursue new opportunities. Others may have been much poorer which itself might have been a contributory factor leading to household breakup or even to greater risk of mortality. While econometric techniques have been developed for trying to allow for this potential “attrition bias” they are necessarily imperfect and approximate. A less extreme case is where households have changed their composition or other characteristics significantly between the two rounds. This raises the issue of at what point this can no longer be considered to be the same household.

2.2 Measurement of chronic poverty based on panel data

Given suitable panel data, the next key issue is how chronic poverty should be identified and measured. In thinking about chronic poverty based on panel data, Yaqub (2000) distinguishes between two main methods: a “spells” and a “components” approach. In the spells approach, the chronic poor are identified based on the number or length of spells of poverty they experience – so that all poor households are classified as either chronic poor or transient poor. For instance, Baulch and McCulloch (1998), using a five round panel data set for rural Pakistan, find that only 3% of the households were income poor in all five years. 58% though were poor in at least one period, suggesting a very high degree of movement into and out of income poverty. Using the ICRISAT panel data set from rural South India, Gaiha and Deolalikar (1993) find that 21.8% of households were income poor in each of nine consecutive years (87.6% of all households surveyed were poor in at least one of the nine years).

The “components” approach distinguishes the permanent component of a household's income or consumption from its transitory variations. One common approach to identifying the permanent component is based on the intertemporal average for the household (Jalan and Ravallion, 1998; McCulloch and Baulch, 1999). Thus households are identified as being chronically poor if their average consumption level falls below the poverty line, and transient poor if their average level exceeds the poverty line but their consumption falls below it in at least one period. An alternative procedure for identifying the permanent component is based on the predictions of a statistical (regression) model capturing the relationship between a household's income or consumption level and its characteristics; such models aim to purge the effect of transitory shocks. Thus Gaiha and Deolalikar (1993) base their concept of “innate poverty” on the predictions of a panel data regression of income on household characteristics, estimated using the fixed effects method. Their innate poverty is essentially a concept of chronic poverty, where this identification takes account of the households' characteristics.

In both cases a number of issues arise. In the case of the spells approach a number of different criteria may be applied, relating to the number or length of periods of poverty experienced. By way of illustration, Figure 1 sets out income profiles of three individuals in each of five consecutive years, with reference to a poverty line. One intuitive criterion for chronic poverty is that the individual's income level must fall below the poverty line in each period in which



they are observed. According to this criterion only individual 1 would be defined as poor. Individuals 2 and 3 only fall below the poverty line in 4 and 3 out of the five periods respectively. However, as they are clearly very poor as well, less stringent criteria for chronic poverty would require individuals to be poor in say only four or three out of the five periods.

A different approach is to focus on the length of time for which someone is poor. For instance, a person may be considered to be in chronic poverty if he or she is poor in three consecutive periods. Based on this concept, individual one experiences chronic poverty in any three-year period that could be considered, and individual 3 over the first three years only (after which she escapes from poverty). But according to this definition individual 2 would not be identified as having been chronically poor over the period observed, because of the higher income experienced in year 3. However, a difficulty arises here because of the truncated nature of the available information; income levels before or after the five-year period are not observed, and individual 2 may well have been poor in the period immediately preceding or following this. Another important point to consider is that it is rarely the case that individuals or households are observed for several consecutive years; often there may be between two to five years between each observation (see Table 1). Therefore, even if it is known that someone is poor at two or more points in time separated by several years, this does not indicate whether or not they were poor in the years in between.

In the case of the components approach the main issue concerns the procedure by which the permanent and transitory components to income or consumption are distinguished. If this is based on the intertemporal mean value (that is, the average over the periods observed) then each of the people in Figure 1 would be considered to be in a situation of chronic poverty. However, if the identification of permanent and transient components is based on the predictions of a regression model relating income or consumption to household characteristics then it is not possible to identify who is in chronic poverty without further information. The latter approach to implementing the components approach is preferable in principle, but its reliability in identifying chronic poverty will depend on how well the household characteristics are able to explain the variations in income or consumption.

One general problem that applies throughout though is measurement error. Any measurements are inevitably subject to error, and in the case of income or consumption this takes a number of forms, including the errors in grossing up data collected based on short-period recall to obtain monthly or annual estimates (including the effects of seasonality), and straightforward recall error. But its significance in the current context is that random measurement error, which can be quite important at the individual or household level, may suggest more variability in consumption or income than there actually is. This would imply that the spells approach is identifying more movement into and out of poverty than there really is. This issue is potentially less serious for the components approach, where the identification of the chronic component focuses on a household intertemporal average or appropriately estimated permanent income, rather than on year to year variations. But the measurement error will still have an impact on the identification of the permanent and transitory components on which this method is based. This is particularly the case because this permanent/transitory distinction relies on the temporal variation for a household, but panels typically have few rounds of observations on each household.

The spells and components approaches to thinking about chronic poverty are quite distinct so the estimates of chronic poverty they give are likely to differ. For instance, in rural South India Gaiha and Deolalikar (1993) find that only one third of those defined as innately poor, that is as having permanent income levels below the poverty line, are poor in each of the nine rounds of data available.² However, several points above argue for the components approach as being a more reliable means of distinguishing transient and chronic poverty than the immediately more intuitive spells approach. To reiterate these include the facts that the impacts of measurement error and the truncation problem are likely to be less serious (or easier to allow for) in the components approach than the spells approach; and the absence of a clearly preferred criterion (among many seemingly plausible alternatives) for identifying chronic poverty according to the spells approach. Further, the intuitively appealing concept of chronic poverty arising from the spells approach (number of years or length of time in poverty) becomes less convincing when – as it mostly does – the available data does not relate to consecutive years, but is rather separated over some period of time.

In other words, based on the components approach, it may be feasible using good quality panel data, even covering relatively short time periods, to identify those that are unlikely to escape poverty permanently over a significant period of time based on their characteristics. The relevant characteristics will be those used in predicting the low permanent income levels. The accuracy of using this to predict poverty status into the future will depend on the extent to which these characteristics may change substantially in the future, something which is obviously unknown but may be predictable to some extent (for instance if the children of a poor household are currently attending school).

One general point to note in both approaches is that the results may be sensitive to the level at which the poverty line is set (Muller, 2000) or to the precise definition of the standard of living measure. Most of these difficulties are inevitable, but they obviously have implications for the ease with which the results of different studies can be compared.

2.3 Non-monetary dimensions of chronic and transient deprivation

While the distinction between chronic and transient deprivation has been discussed above principally with reference to income or consumption, as stressed above is relevant to other dimensions as well. One important instance is short term aspects of nutritional status; for instance the weight-for-height anthropometric measure can fluctuate quite significantly over relatively short time horizons. These fluctuations may reflect various factors such as the period of the agricultural season or the effects of disease; again it is important to separate out cases of transient weight-for-height malnutrition from chronic instances. This is less of an issue for other nutritional measures which provide information on longer term nutritional status. Height-for-age malnutrition often reflects past events and may be less easily reversed – hence the transient/chronic distinction is less relevant in this instance. This is a specific instance of a more general point highlighted above – that the chronic/transient distinction is important for some dimensions of poverty, but much less important for others. In the case of education,

² More surprisingly, 27.6% of those identified as being persistently poor are considered to be innately non-poor – i.e. given their characteristics and the coefficients of the fixed effects regression equation for income. Given the demanding criteria for being persistently poor, this does raise the issue of how accurately the permanent and transitory components have been distinguished.

whether or nor a child is enrolled in school can fluctuate over time, as children may drop out temporarily or withdraw permanently; the same is clearly not true of literacy status.

The chronic-transient distinction is also potentially relevant for other dimensions of deprivation such as ill health, vulnerability or empowerment, but in each case this has not been considered in depth. In some cases (such as ill health, where this distinction is clearly important) available information generally does not enable this distinction to be made in practice. For some other dimensions (e.g. vulnerability) this may be due to difficulty in quantifying the underlying concept, let alone distinguishing any chronic or transient components.

In all instances it is important to re-emphasise that the concept of chronic poverty can be meaningfully applied over different horizons, ranging from intra-year variations (where chronic poverty is that poverty which persists over the whole agricultural season) to intra-generational (where chronic poverty implies that poverty which persists from one generation to the next). Of course the nature of chronic poverty in these two extreme cases is somewhat different, with the nature of chronic poverty becoming much more severe as longer time horizons are considered.³ But the principles for distinguishing chronic and transient poverty are broadly similar, even if their interpretation is different.

3 Evidence on chronic and transient poverty based on panel data

As outlined in section 2, different authors have adopted varying concepts in analysing chronic and transient poverty. For instance some have adopted the spells approach whilst others have used the components approach. Different authors adopt different underlying concepts of poverty. Whatever the differences, they can raise serious problems in making cross study comparisons, and more generally in forming conclusions about global patterns of chronic poverty. However, provided we keep this in mind and consider the fundamentals underlying each study, it is still worthwhile to outline the findings associated with chronic and transient poverty, including the characteristics associated with each (which may be more easily compared than the levels).

This section focuses on information from longitudinal (panel) datasets, which as highlighted in section 2 is the basis for most of the research relating to chronic poverty. By having information on the same households or individuals at more than one point in time, such datasets enable assessment of the dynamics of living conditions, and can therefore capture movements into and out of poverty, thus allowing for a chronic and transient poverty focus.

3.1 Evidence on the extent of chronic poverty

As mentioned in section 2, chronic and transient poverty represent different aspects of poverty. In particular, if an individual is classified as chronically poor this is likely to reflect long term/permanent deprivation, compared to transient poverty which is more temporary or short term. Given these fundamental differences, the characteristics

³ At the same time though a longer time horizon may also mean longer gaps over which individuals are not observed.

associated with these poverty types are likely to differ. However, before focusing on these characteristics, we begin by providing a more general overview of the panel evidence for the extent of chronic poverty in practice.

A summary, compiled by Baulch and Hoddinott (2000), of evidence from important studies based on panel data is presented in table 2, and provides a useful review of income and consumption poverty dynamics. Based on this data, households can be classified as “always poor”, “sometimes poor” or “never poor”. Setting aside those that are never poor, in all cases only a minority of the rest of the households are classified as “always poor”; in some cases this is only a small minority, though of course this may partly reflect the number of rounds in the panel (other things being equal, a household is less likely to be always poor the greater the number of time periods observed). But the relative importance of chronic, compared to transient poverty, also varies according to the study population. For example around a quarter of the households that experienced poverty at some point in the nine years of the ICRISAT panel are classified as always poor (Gaiha and Deolalikar, 1993), whereas the corresponding figure for the five year Pakistan panel is around one twentieth (Baulch and McCulloch, 1999). Additionally because of the generally greater variance in income measures compared to consumption, transitory poverty is likely to be higher when income rather than consumption is used as the welfare measure (Baulch and Hoddinott, 2000, p.11).

Table 2:

Country, years and [source]	Number of Waves	Welfare measure	% of households		
			Always poor	Sometimes poor	Never poor
South Africa, 1993-98 [Carter, 1999]	2	Expenditures per capita	22.7	31.5	45.8
Ethiopia 1994-95 [Dercon and Krishnan, 1999]	2	Expenditures per capita	24.8	30.1	45.1
India (NCAER) 1968/69 – 1970/71 [Gaiha, 1998]	3	Income per capita	33.3	36.7	30.0
India (ICRISAT) 1975/76 – 1983/84 [Gaiha and Deolalikar, 1993]	9	Income per capita	21.8	65.8	12.4
Cote d'Ivoire 1985-86 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	14.5	20.2	65.3
Cote d'Ivoire 1986-87 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	13.0	22.9	64.1
Cote d'Ivoire 1987-88 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	25.0	22.0	53.0
Zimbabwe 1992/93 – 1995/96 [Hoddinott, Owens and Kinsey, 1998]	4	Income per capita	10.6	59.6	29.8
China 1985-90 [Jalan and Ravallion, 1999]	6	Expenditures per capita	6.2	47.8	46.0
Pakistan 1986-91 McCulloch and Baulch, 1999]	5	Income per adult equivalent	3.0	55.3	41.7
Russia 1992-93 [Mroz and Popkin, 1999]	2	Income per capita	12.6	30.2	57.2
Chile 1967/68 – 1985/86 [Scott, 1999]	2	Income per capita	54.1	31.5	14.4
Indonesia [Skoufias, Suryahadi and Sumarto, 2000]	2	Expenditures per capita	8.6	19.8	71.6

Table 3:

Country and source	Welfare measure	Time span (years)	Per cent of households that:			Per cent of households in bottom quintile that:		
			Remain on diagonal	Move up by one quintile	Move up by two or more quintiles	Remain on diagonal	Move up by one quintile	Move up by two or more quintiles
India [Swaminathan, 1991a, 1991b]	Land	8	48.2	36.5	15.3	52.9	17.6	29.5
Peru [Glewwe and Hall, 1998]	Expenditure	5	36.0	37.8	26.2	40.3	23.0	36.7
South Africa [Maluccio, Haddad and May, 1999]	Expenditure	5	34.6	41.2	24.2	40.9	30.2	28.9
Vietnam [World Bank, 1999]	Expenditure	5	40.4	39.8	19.8	48.6	27.2	24.2
India [Lanjouw and Stern, 1991, 1993]	Income	9 (1974/75 – 1983/84)	23.0	31.0	46.0	17.4	21.7	60.9
India [Lanjouw and Stern, 1991, 1993]	Income	12 (1962/63 – 1974/75)	25.7	34.3	39.0	15.8	26.3	57.9
India [Lanjouw and Stern, 1991, 1993]	Income	5 (1957/58 – 1962/63)	25.6	44.9	24.5	26.3	26.3	47.4
Chile [Scott and Litchfield, 1994]	Income	18	23.3	39.0	37.7	8.0	32.0	60.0

Source: Taken from Baulch and Hoddinott (2000), Table 4.

However, care should be adopted when interpreting some of the “poor” categories, as households in the “sometimes poor” group are likely to exhibit heterogeneity. For example, households who are poor in just one period are included in the “sometimes poor” grouping along with households who are poor in all but one of the periods. The results could therefore change significantly with slight variations in definition (or when disaggregating the “sometimes poor” group further).

Table 3, derived from the same source, reports on the proportion of households within these panel datasets that move from one quintile group to another over relatively longer periods of time. These quintile groups are defined using income or consumption based standard of living measures. Of particular relevance here is the percentage of households originally in the lowest (poorest) quintile that remain there compared to those who move over time into higher quintile groups. In several cases quite high proportions of households remain in the lowest quintile. In the studies of India, Peru, South Africa and Vietnam, more than 40% of the households in the lowest quintile remained there over periods of time ranging from five to nine years. If all those in the bottom quintile are included among the poor for that country then these households are clearly in a situation of chronic poverty over a relatively long time period. The proportions remaining in the bottom quintile are lower in some of the other studies.

3.2 Characteristics of the chronic poor

By focusing on the characteristics of individuals/households in chronic poverty, this allows us to consider now just how chronic poverty differs from transient poverty, but perhaps more importantly allows policy trying to combat chronic poverty to be based on a solid understanding of its likely underlying determinants. The characteristics most commonly associated with chronic poverty include being in a disadvantageous situation with respect to the following: human capital; demographic composition; location; physical assets; and occupational category, among others.

Human capital

General axioms and intuition tend to suggest that increasing human capital will decrease the probability of being chronically poor. Available evidence relating to education generally supports such principles in a number of cases, with various researchers finding that increased levels/years of education decrease the probability of being chronically poor (Adam and Jane, 1995, in Pakistan; Campa and Webb, 1999, in Peru; Rodgers and Rodgers, 1993, in the U.S; and Wlodzimierz, 1999, in Poland). Some studies find that it is the higher levels of education, such as secondary schooling (McCulloch and Baulch, 2000; Jalan and Ravallion, 1999, 2000, for Pakistan and China respectively) and university (World Bank, 2001, in Hungary), that reduce the probability of chronic poverty the most. Which level is most important may vary from one country to another. In Hungary the World Bank (2001, p. 14) even suggest that the attainment of higher educational levels is a “virtual guarantee” against long term poverty there, while in poorer countries it is likely that secondary education may be most important.

Other human capital evidence is also supportive of such axioms. For example, Jalan and Ravallion (1999, 2000) for rural China, and Mehta (2001) for India, found illiteracy to be positively related to chronic poverty. However it may not be just formal education that matters; Gaiha and Deolalikar (1993) suggest for rural South India that innate

disadvantages, such as the lack of management skills, are positively and significantly associated with chronic poverty.

Demographic factors

Other things being equal increased household size is likely to place extra burden on a household's asset/resource base and would generally be expected to be positively related to chronic poverty. McCulloch and Baulch (2000) for Pakistan; Jalan and Ravallion (1998, 1999, 2000) for rural China; Włodzimierz (1999) for Poland; and Aliber (2001) for South Africa, all found this to be the case. A similar logic applies for increased dependency ratios, number of children, and the presence of a third generation in a household (McCulloch and Baulch, 2000; Jalan and Ravallion, 1999, 2000). However, while these aggregate correlations highlight an important reality, at the same time they may hide a greater complexity in some specific cases. For instance for those reliant on peasant agriculture for their livelihood, a large household size may actually be appropriate in enabling them to overcome labour shortages at critical periods.

Single parent headed households are more likely to be amongst the long term poor. For Hungary (World Bank, 2001) single parent headed household were twice as likely to be in long-term poverty, especially if headed by females. A similar result applies in South Africa (Aliber, 2001). Though households headed by a pensioner did not have significantly higher probability than average of being in long-term poverty in Poland (Włodzimierz, 1999), it would appear that both gender and household structure are important influences. For example, in Hungary, single elderly women face a 19% chance of being in long term poverty – nearly eight times the rate faced by single elderly men (World Bank 2001, p13).

Evidence from India (Lanjouw and Stern, 1991), Hungary (Kemeny, Havas, and Kertesi, 1994, 1995) and the United States (Rodgers and Rodgers, 1993) suggests that belonging to a disadvantaged ethnic group substantially increased the likelihood of being in chronic poverty. In the case of Hungary, more than half of those of Roma ethnicity were chronically poor. Lanjouw and Stern (1991), for Palanpur, found chronic poverty to be disproportionately high amongst marginalised groups such scheduled tribes, the elderly women, the disabled and groups living in remote rural areas.

Location

The evidence from Palanpur is one specific example of the importance of geographic location. Location in fact plays a major part in the opportunities available to households and therefore the probability of being classified as long-term poor. In Uganda (Deininger and Okidi, 2002) there is a significant rural chronic poverty bias, which could, amongst other things, be related to the inadequate supply of health. For Hungary Galasi (1998) found that nearly 60% of Hungary's long-term poor lived in rural villages, while only 9% of the chronically poor lived in Budapest.

Physical assets

Lack of physical assets is another important factor often found to associated with chronic poverty, with evidence for this having been identified by McCulloch and Baulch (2000) and Adam and Jane (1995), both in the case of Pakistan. The same point applies also to land ownership (Jalan and Ravallion, 1999, 2000; Gaiha and Deolalikar, 1993; Adam

and Jane, 1995; Mehta 2001)⁴. In the case of Poland Wlodzimierz (1999) established that the possession of liquid assets had a strong negative association with chronic poverty.

Occupational status

Economic activity status is another important correlate of chronic poverty. Okidi and Kempaka (2002) for Uganda and Wlodzimierz (1999) for Poland both found that self employed farming households are more likely to be chronically poor. In Uganda's case, this should not come as a big surprise, in view of both the predominance of agriculture as a source of employment for Uganda's poor, and the relatively limited market integration of most of the rural producers⁵. Related to this low food grain yields were found to be positively associated with chronic poverty in China (Jalan and Ravallion 1999, 2000), a result which would be expected in other economies where large proportions of the population are engaged in peasant agriculture. This of course raises the issue of what underlies the low food yields; it may for instance reflect factors identified above such as lack of physical assets of a disadvantageous location.

In contrast to this, Campa and Webb (1999) found for Peru that chronic poverty was positively associated with household heads who were employed outside of the household. This suggests that in this case there is little difficulty in obtaining employment, but problems in finding sufficiently remunerative employment. In other instances, notably industrialised and transition countries, there is a natural linkage between loss of employment, loss of income, and increased probability of long term poverty. In Hungary the probability of chronic poverty increases the larger the numbers of unemployed per household⁶ (World Bank, 2001) and the longer the period of unemployment (Micklewright, 1999). This highlights the unsurprising fact that which occupational categories are disproportionately associated with chronic poverty will vary from one country to another, and are also likely to differ within countries.

While various other factors have been identified as important correlates of chronic poverty, these tend to be specific to a limited number of cases and so are not reviewed here.

3.3 Characteristics of Transient Poverty

Because of the more temporary nature of transient poverty we would expect the factors associated with transient poverty to differ from those for chronic poverty. However, some factors appear to be important for both, notably human capital. Evidence from some studies suggests that increased education in general (McCulloch and Baulch,

⁴ Considering income levels more generally, a number of researchers (Glewwe and Hall 1998; Lanjouw and Stern 1993) suggest that asset accumulation is far less important than the returns to endowments. For example Gunning et al (2000) found that asset accumulation via steady investment in land quality together with considerable learning by doing, was far more effective in raising income (Baulch and Hoddinott 2000, p 16).

⁵ This illustrates the importance of using productive policies as a means for poverty reduction in a subsistence economy, Deininger and Okidi (2002), p19.

⁶ The probability of being in long term poverty increases from 14% with one unemployed member of household to 22% when there are two people unemployed, p 12.

2000) or specifically of the household head (Jalan and Ravallion, 1998)⁷, reduces transient poverty. This may suggest that more educated households are better able to protect themselves against fluctuations in their long term conditions.

McCulloch and Baulch (2000) find for Pakistan that larger household size is associated with increased transient poverty. By contrast, in rural China, Jalan and Ravallion (1998) found transient poverty to be higher amongst small households. In this case this could have been reflective of seasonal labour shortages (which could limit their ability to smooth their consumption levels). Transient poverty tends to be higher for those households with lower farm yields and less wealth (Jalan and Ravallion 1998). However, it is also higher for those households using modern agricultural techniques and those experiencing large wealth fluctuations. The former would imply that modern techniques lead to higher average yields but incorporate higher risk and supports the conclusion that high uninsured income risk underlay the transient poverty. In India, Gaiha and Deolalikar (1993) found factors such as adverse price movements to be more closely associated with transient poverty than with chronic poverty. Again it is the inability of many households to insure themselves adequately against fluctuations in their living conditions which leads them temporarily into poverty.

Carter and May (1999) found for South Africa that households in receipt of non-government transfers, such as remittances from families, are by and large transitorily poor. This emanates from the relative irregularity of such transfers, compared to government transfers which are both regular and usually more reliable.

In looking at intra-year chronic and transient poverty in rural Rwanda, Muller (1998) often found the correlates to differ, but a substantial share of poverty was seasonally orientated⁸. The adoption of low risk strategies by many farm households (e.g. cultivating staple crops such as sweet potatoes with low commercial returns) was positively correlated with chronic seasonal poverty. Contrast this with the planting of cassava, which can be kept in the ground for most of the year and used in famine periods. The cultivation of cassava would therefore be expected to have a negative effect on transient poverty, and does so. Specific cultivation patterns and practices then may be important factors underlying chronic poverty, not just within, but also between years.

Many of the factors identified as important characteristics of transient poverty have also been identified as having an association with the poverty transitions. For instance, several studies emphasise the importance of assets, both physical and human, in influencing poverty transitions. Thus higher levels of education and ownership of livestock increase the likelihood of exits from poverty and reduce the likelihood of entry to poverty in rural Pakistan (Baulch and McCulloch, 1999). Also in Pakistan, Adam and Jane (1995) report that changes in assets (land ownership, education, migration) were responsible for one quarter of income changes in the poorest quintile group, but that these factors contributed relatively less to income changes in less poor groups. Higher levels of human capital in urban areas and physical capital in rural areas in Côte d'Ivoire increased the likelihood to escapes from poverty in the 1980s in a situation of general economic decline (Grootaert and Kanbur, 1995; Grootaert, Kanbur and Oh, 1997).

⁷ 'Transient poverty levels decline with household head education levels, while the proportion of poverty that is transient varies little with the education of the head', p 346, Jalan and Ravallion 1998.

⁸ Confirmed to a large extent by the large household mobility across quintiles in all seasons, p. 36 Muller.

Several factors that are good correlates of poverty status, such as dependency ratios, are poor correlates of poverty transitions. This is entirely consistent with the fact that such factors tend to be more strongly associated with chronic rather than transient poverty.

There is also quite a lot of evidence on factors influencing poverty transitions in the 1970s and 1980s in the United States (Bane and Ellwood, 1986; Stevens, 1994). Bane and Ellwood identify the main routes into poverty as being a reduction in the earnings of the household head, of factors associated with family structure or life cycle events (e.g. birth). They find movements out of poverty to be associated with increased earnings of all household members, and that often the earnings of secondary household members are particularly important. Marriage or remarriage is also a factor behind escapes from poverty in several cases. By contrast transfers were found only to be modestly important in escapes from poverty, with most households only receiving transfers relatively briefly. Stevens, updating Bane and Ellwood's study, finds that mobility out of poverty was lower in the 1980s than previously, and that this was particularly apparent among female-headed households.

In summary, some of the factors associated with chronic poverty (such as low educational levels) are also associated with transient poverty, but many factors differ. Empirical evidence strongly supports the view that transient poverty is associated with an inability of households to maintain their consumption levels in the face of fluctuations or shocks affecting their incomes or individual circumstances. The relatively different characteristics associated with chronic and transient poverty lead Jalan and Ravallion (1999, 2000) and Gaiha and Deolalikar (1993) to suggest that different policy responses are likely to be appropriate in each case.

3.4 The Importance of Measurement Issues

Measurement issues can play a large part in establishing how much confidence we can place on findings. Issues such as recall error, incorrect estimation, imputing missing data values are also problems associated with data collection and poverty analysis generally. This is true in all quantitative work on poverty, and as stressed in section 2 this applies particularly to looking at poverty dynamics based on panel data. Measurement errors of this nature can lead to high volatility in the short run of those moving into and out of poverty, when in fact poverty level may actually be unchanged. This might imply that shorter panel datasets are less reliable.

One important issue in poverty analysis concerns the choice of standard of living measure, where among monetary measures this generally amounts to a choice between measures based on a household's income or consumption expenditure. Many analysts have in the past based the choice of welfare measure upon what data has been available. However, more recently large panel datasets containing extensive information about socio-economic and community variables have become available. These datasets often contain both income and consumption information, and therefore allow researchers a choice of which monetary welfare measure to use.

Despite this choice, consumption expenditure tends to be the chosen monetary measure for poverty, both for theoretical reasons (the practice of consumption smoothing means that income may not be as good a measure of living conditions as consumption) and because it is generally considered to be more accurately measured. It follows that

consumption generally exhibits lower variance levels than income. Given this, it would be reasonable to assume that the extent of chronic and transient poverty may vary just by changing the welfare measure. Therefore, it is wise to test the robustness of welfare measures by undertaking sensitivity analysis on the choice of measure. One way of doing this is to compute how the extent of chronic poverty varies according to whether income or consumption measures are used; a second is by trying to adjust for the effects of measurement error.

As an example of the first approach, Gaiha (1989) for rural India tested to see how the proportions of people in chronic poverty varied depending on whether income or consumption welfare measures were used. Based on the three wave panel covering the period 1969-71 it was found that 86% of the income defined chronically poor were also chronically poor under the expenditure measure, in other words quite a high degree of convergence.

As an example of the second approach, McCulloch and Baulch (2000) sought to allow for the effects of measurement error affecting their estimates of chronic poverty. In this case, income was the only monetary based measure available for all 5 years of the panel dataset. To allow for the effects of measurement error on the results, they constructed a simple model for the 3 years that they had both income and expenditure observations⁹ and estimated the measurement error. From this, they calculated and then used an adjusted income variable¹⁰ as the chronic poverty monetary measure.

Additional examples where the accuracy of monetary welfare measures was cross checked include Scott's (2001) poverty transitions work in Chile, where transitory income was cross referenced against harvest changes, livestock output, household wealth changes. Similarly Dercon and Krishnan (1998) for Ethiopia considered the effect of measurement error on their assessment of poverty dynamics, and found that measurement error might account for up to a half of the household mobility across consumption quintiles.¹¹

In summary, panel data sets represent a rich source of information for assessing the extent and nature of chronic and transient poverty. Inevitably different studies and researchers use different approaches for defining both poverty in general and chronic poverty in particular, which does introduce questions of comparability. Nevertheless, the available quantitative evidence does indeed suggest that chronic poverty is a distinct phenomenon, different in nature from transient poverty, and quantitatively important in its own right. Chronic poverty is strongly associated with disadvantages that are difficult to reverse quickly including lack of assets (human and physical, among others), high dependency rates, residence in remote locations and working in low return occupational categories. While transient poor may also have some of the same characteristics, they are able to move into and out of poverty, often as a result of an inability to insure

⁹ By exploiting the fact that consumption and income tend to be well correlated and therefore can be used as instruments for each other in econometric models (McCulloch and Baulch, 2000, p 23).

¹⁰ Which shared the same estimated mean as the true income variable but has the estimated variance of the true income variable, rather than that of the observed income (McCulloch and Baulch, 2000, p 23).

¹¹ This was based on a regression of consumption on prices, wages, shocks (seasonal effect variables), and on a number of controls for changes in household size and composition, which the authors used t test for the extent of consumption smoothing.

themselves adequately against fluctuations in their living conditions, that is an inability to smooth their consumption levels sufficiently. These are distinct phenomena, potentially requiring different policy responses.

The vast majority of the analysis to date has been based on monetary measures of living conditions, though relating these to household characteristics (covering many different dimensions). There is opportunity and scope to investigate similar concepts of chronic and transient deprivation in other dimensions of wellbeing and this is an important direction for future research.

4 Quantitative Assessment of Chronic Poverty Without Panel Data

Extensive resources are required to form panel data sets, and they are therefore relatively rare. Thus, as emphasised in section 2, panel data sets are not available in many instances, even though one off or repeated cross-sectional household survey data sets often will be. This means that it is not possible to trace the fluctuations of income, consumption or other variables over time for individual households or their members, simply because the individual or household is only observed once. In such circumstances, is it possible to say anything about poverty dynamics in general, and chronic and transient poverty in particular?

One way of doing so is to follow the second approach identified in section 2 above, that is to seek to identify the chronic poor is by looking at characteristics that, though only observed once, provide information about past living conditions. Alternatively, with certain assumptions and or limitations, it is possible to assess aspects of dynamics based on repeated or even one off household surveys. This section briefly summarises these different approaches, assessing their strengths and weaknesses and providing examples of the types of information they can provide. The following approaches will be considered:

- (i) using repeated cross sectional surveys in assessing dynamics;
- (ii) proxies for persistent poverty: depth and multidimensionality;
- (iii) other methods of using household surveys;
- (iv) assessing chronic poverty based on one-off measures that capture dynamics.

4.1 Using repeated cross sectional surveys in assessing dynamics

As noted in section 2, instances where repeated cross sections are available (that is two or more rounds of a survey drawn from the same population, though without a panel element being built in) can be used to consider changes in poverty in aggregate and for appropriately defined cohorts or subgroups of the population (for example, according to geographic location or main activity). This identifies the direction and magnitude of the overall change in poverty experienced by the different cohorts. And because it is focusing on overall measures of poverty for a group, it has the advantage that, because of the averaging this involves, the changes are more accurately measured than those for individual households within a panel. These groups can be defined at different levels of detail, though attention needs to be paid to maintaining an adequate sample size. But these comparisons will not say anything about dynamics *within* these groups, in other words about the extent of movements into and out of poverty within the groups (which can be considerable)). While not distinguishing chronic and transient poverty at the

individual or household level, this can still provide valuable information on chronic poverty.

A number of examples of this type of analysis have been conducted. Thus for instance in a study of poverty in Ghana over the 1990s based on two cross sectional surveys, Coulombe and McKay (2001) found that among falling poverty at the national level (from 51.7% in 1991/92 to 39.5% in 1998/99), poverty among those resident in rural areas in the savannah zone hardly changes. Thus this last group clearly experiences persistent poverty, strongly suggesting that many households there are also chronically poor.

4.2 Proxies for chronic poverty: depth and multidimensionality

Another approach to identifying chronic poverty without panel data is to focus on what are essentially proxies for persistent poverty – that is to identify those suffering deep or severe poverty, or those experiencing multidimensional deprivation (Hulme, Shepherd and Moore, 2001). Because each of these are assumed to indicate persistence of poverty, they can be identified based on observations made at a single point in time, through a survey or otherwise. Depth and severity of poverty are concepts generally associated with income or consumption poverty, though have also been applied to malnutrition; they focus on the extent to which income, for instance, falls short of the poverty line.

Multidimensionality of deprivation can be identified from any information source that provides information on a range of key dimensions of living standards (for instance education, health, lack of access to facilities, poor quality housing conditions, in addition to the other aspects identified above). The issue in this case is to define what multidimensional deprivation means: which dimensions, and, in each case, what constitutes deprivation? What about those that are deprived in some dimensions, but not others (as discussed above)? In other words, should different dimensions be combined, and if so how? To date there has been little attempt to do this at the household level, though it has been widely attempted at national or regional level, for example the UNDP's family of indices measuring human development.

While many studies of poverty focus only on its incidence, many others also consider its incidence or depth. In seeking to identify those suffering deep or severe poverty, this generally relates to a state where an individual or household's standard of living measure is a certain percentage below the "normal" poverty line. Many poverty studies do this, for example identifying the extreme poor (or ultra poor) in addition to those classified as poor. For instance, Mehta and Shah (2001) defined severe poverty as those with income is less than three quarters of the poverty line or below; according to this 15.3% (14.8%) of the rural (urban) population for the whole of India were defined as severely poor. This compares to 37.2% (32.3%) of people below the poverty line in rural (urban) areas. This poverty depth or severity is not the same as chronic poverty; however, the method assumes that there is a substantial overlap between these two groups. In Uganda, Okidi and Kempaka (2002) consider the living conditions of the poorest 20% as a proxy for severity.

Many other studies have adopted a similar approach. Thus for instance in Nigeria Canagarajah and Thomas (2001) found that all extremely poor these households were headed by individuals who possessed little or no schooling, who are predominantly self

employed and spend 80% of their income on food, characteristics that are quite likely associated with chronic poverty (Canagarajah and Thomas, 2001, p. 16). Indeed they find the depth and severity of poverty to be highest in households headed by a single male, compared to all other households, and to exceed those of female headed households by a factor of 3 to 5 (Canagarajah and Thomas, 2001, p. 23). In Rwanda, severe poverty (defined as those whose total consumption standard of living measure fell short of even the food poverty line; Government of Rwanda, 2002) was much greater in rural areas than urban areas. Severe poverty was particularly prevalent amongst households where the main activity of the household was working as an agricultural labour or working as an own account farmer, as well as among those households who had no member working. It was disproportionately associated with households headed by females, especially widows, and those divorced¹².

The critical question in all this is how reliable a proxy severe poverty is for chronic poverty. This can be assessed in situations where both chronic and severe poverty can be defined, in other words cases where a panel is available. In the case of Kwa-Zulu Natal, South Africa this proxy is found not to be accurate (Aliber, 2001).

A different concept of severe poverty discussed by Mehta and Shah (2001) for India focused on the inability to consume two square meals a day. She reports that in 1993/94 84.2% of rural households and 98.5% of urban households did consume two square meals a day throughout the year. In rural areas non-availability of two square meals a day peaked between June-September in urban and rural areas, with up to 2.7% of rural households not receiving this. This measure can also be used to provide a geographic profile of severe poverty; in the case of India, the proportions of households not consuming two square meals a day were highest in Orissa, Kerala, West Bengal and Assam.

To date there has been very little empirical study of multidimensionality as a proxy for chronic poverty.

4.3 Other methods of using household surveys to assess chronic and transient poverty

Two other methods have been developed which the authors argue can distinguish chronic and transient poverty without having panel data available. Suryahadi and Sumarto (2001) distinguish chronic and transient poor in a single cross section survey in Indonesia using an approach superficially similar but different in detail to the components approach. They estimate a regression model of the relationship between a household's consumption level and its characteristics. However, as some types of households may experience bigger fluctuations in their consumption levels than others, they allow the residual error term of the regression (which considers transitory fluctuations among other things) also to vary with (a potentially different set of) household characteristics. This model is used as the basis for assessing vulnerability of households to poverty. But they also use the predicted values of this model (an estimate of the permanent component) to distinguish between the transient poor (those whose current consumption falls below the poverty line, but their predicted consumption lies

¹² Based on average depth of poverty

above it) and the chronic poor (those whose actual and predicted consumption levels both lie below the poverty line).

This is different from the components approach for panel data outlined above because it uses only information on variations between households at a point in time, and not any information on variations for each household over time. Both are used in applying the components approach using panel data, and given that the time dimension is fundamental, this is likely to result in much less accurate identification of chronic poverty. In addition the point made for the components approach above that the reliability of the identification of the chronic and transient poor will depend on the accuracy of the identification of the underlying relationship between consumption and household characteristics applies even more forcefully in this case.

Following this method, Suryahadi and Sumarto (2001) found that most of the poverty rate increase in Indonesia since the economic crisis of 1997¹³ was due to increased chronic poverty. Post-crisis, it was found that the chronically poor comprised 35% of the total poor, compared to 20% pre-crisis, and those classified as having a “high”¹⁴ vulnerability to poverty increased dramatically from 6.8% of households to 18.4%. This suggests that a much higher proportion of households are “likely” to fall into chronic poverty, in the future. This suggests how shocks may be important in giving rise to chronic, in addition to, transient poverty.

Chronic poverty identified in this manner was also particularly prevalent amongst those households whose head had not completed primary education. Female and male headed households had an even spread of chronic poverty. By occupation sector, chronic poverty within the agricultural sector was 18.7%, compared to the services and trade sectors which had approximately 3% chronic poverty. Both the chronically poor and highly vulnerable households were more common in rural areas than urban areas.

In addition to this method, a different one has been developed by Gibson (2001) which he argues can be used to identify chronic consumption poverty in the absence of a panel. This method is based on the fact that consumption data – especially for frequently purchased items such as food – is frequently collected on a short period recall basis, to facilitate more accurate response. As observed by the late Chris Scott, because the recall period is short it will not be typical. Thus this reliance on short period recall is likely to exaggerate extremes, and so also to exaggerate levels of poverty. Assuming for purposes of illustration that the recall period is one week, Scott showed that this exaggeration can be allowed for given knowledge of the extent of correlation between the consumption levels in the recall week and in the subsequent week(s). If this information is available it is possible to construct more accurate estimates of monthly or annual consumption than by just multiplying the short period recall with the appropriate factor (30/7 or 52 respectively in this example).

To have the information to compute the necessary correlation coefficient requires that at least a subset of the households in the survey have been enumerated throughout the year, collecting information on their consumption levels each time. The correlation coefficients computed using this information can then be used to estimate annual consumption for the remaining households that were surveyed only once. Gibson

¹³ The analysis covers the period 1996-1999.

¹⁴ Greater than a 50% probability, based upon household characteristics and current consumption

applies this based on household survey data for Papua New Guinea. He then compares poverty estimated in this way with poverty estimated by simply grossing up for all households ignoring the correlation issue. He identifies as the transient poor those identified as poor in the latter case but not in the former, and the chronic poor as those poor in both cases.

However, this does not correspond to a distinction between transient and chronic poverty. It is though an important demonstration of the consequences of this specific mis-measurement of poverty. What Gibson calls transient poverty is in fact those that are incorrectly identified as being poor using the commonly applied technique (where the correlation information is not available). Similarly what he calls chronic poverty are those correctly identified as poor using the commonly applied technique. In other words this does not even correspond to intra-year transient and chronic poverty (which could only be distinguished for the subset in the panel). His method and demonstration is important, but not as a way of distinguishing chronic and transient poverty.

Based on his analysis Gibson (2001) found a headcount poverty rate of 30.4%, of which roughly equal proportions of households were in what he defined as transient and chronic poverty¹⁵. For the rural sector a similar transient/chronic poverty ratio applied, though in urban areas only one third of the headcount poverty was transient for the urban sector¹⁶.

Gibson found that three quarters of the poverty gap was due to measured expenditure variations within the year. Further disaggregation revealed that urban households actually experience greater within year instability in household expenditure than rural households. This is primarily caused by the hosting of extended family members coming from rural areas, thus creating unstable demographic compositions. Gibson subsequently concluded that if there was a moderately low level of poverty and high level of intra-year consumption variability then the transient poverty component is likely to be large (Gibson, 2001, p. 263). However, it is important to re-emphasise again that this identification of “chronic” and “transient” poverty does not correspond to the conventional understanding of these terms. This method is important as a contribution to better measurement of consumption poverty; but it is not appropriate to consider the dynamics of poverty, even on an intra-year basis.

4.4 One off measures that capture dynamics

Various examples of this have been referred to above, including height for age malnutrition or illiteracy. Also a low level of assets may be considered as a good indicator of chronic deprivation (although asset holding can fluctuate over relatively short time periods). This is an important and valuable approach, but to date there has been relatively little quantitative assessment of this potentially rich source of information.

The area where this has been considered a bit more is using anthropometric measures such as height for age, which though static in measurement, can be considered dynamic by design. Moreover, they have the advantage of being individually collected and

¹⁵ 15% of households in each category.

¹⁶ From a comparability perspective, poverty variations by sector may have important consequences for chronic poverty measurement. For instance if cross sectional estimates of poverty contain differing degrees of transient poverty and chronic poverty, this may lead to bias if such variations are not considered in a purely chronic poverty orientated analysis.

provide insights into the distribution of intra-household resources (unlike most of the measures discussed elsewhere in this paper). Though primarily used for children under the age of five years, they are still useful in picking up an element of an individual's history. A stunted child could be indicative of previous dietary deficiencies. Evidence from China by Morgan (2000) based on anthropometric data shows that the average height of school children has increased with family incomes and the decline of poverty – in other words that there is declining chronic deprivation according to this key measure of nutritional status.

Unfortunately it is less feasible to use other anthropometric measures, such as weight for height or the Body mass index (BMI)¹⁷ as a measure of chronic deprivation in the absence of panel data; such measures are less informative about past malnutrition.

In summary, it is important to recognise that longitudinal or panel data will often not be available, and even where they do have some associated problems, for instance the effects of measurement error and possible systematic patterns of attrition. As argued in this section, it is possible to draw inferences or conclusions about poverty dynamics in general and chronic poverty specifically even in the absence of panel data. Some assumptions, or sometimes limitations, are implicit in applying some of these methods but they do offer other important advantages. In instances where panel data are available it is important to consider the extent to these alternative methods give similar conclusions to the analysis based on the panel data, in other words to assess whether the assumptions seem reasonable.

5 Conclusions

Most available quantitative evidence based on panel data does tend to find that the factors associated with chronic and transient poverty are indeed distinct, as might be anticipated. Chronic poverty is typically associated with lack of assets (physical and human, as suggested among others by Deininger and Okidi, 2002), being trapped in low productivity activities (itself perhaps a consequence of poverty), disadvantageous demographic characteristics (notably a high dependency ratio), and location in remote or otherwise disadvantaged areas. Transient poverty is more typically associated with cases where households have very little ability to insure themselves against fluctuations due to either external factors such as prices, climate or job availability, or household level shocks such as serious illness or death. Of course it may also be associated with relatively low levels of asset holdings. These broad generalisations appear to hold even against the backdrop of a range of different approaches to defining chronic and transient poverty.

While evidence from a number of studies suggests that more poverty, at least in the monetary dimension, is transient rather than chronic, it is clear that chronic poverty is a real and important phenomenon. This is especially so taking account of the fact that the inevitable consequence of measurement error (certainly an important issue in using panel data) will be to show more variability in income or consumption than there really is, at least based on the spells approach. In this and other respects the components

¹⁷ Defined as an individual's weight in kilograms divided by the square of the individual's height in metres.

approach may be a more reliable means of identifying those suffering or likely to suffer persistent poverty, especially so when the time horizon of available panels is short.

However, there are many aspects of chronic deprivation that need to be examined in much more detail. One that relates to the monetary dimension among others is to consider further the reliability and usefulness of results of applying techniques to identifying what is considered to be chronic and transient poverty without using panel data. But a much more important priority is to separate chronic and transient deprivation in other dimensions where this distinction is meaningful, and to consider the relationships between these different dimensions.

References

- Adam, R.H. and J.H. Jane (1995), "Sources of Income Inequality and Poverty in Rural Pakistan", International Food Policy Research Institute Research Report 102.
- Aliber, Michael (2001), "An Overview of the Incidence and Nature of Chronic Poverty in South Africa", Chronic Poverty Research Centre Background Paper No. 3, May.
- Bane, M. and D. Ellwood (1986), "Slipping into and out of Poverty: The Dynamics of Spells", *Journal of Human Resources*, 21:(1), 1-23, Winter.
- Baulch, Bob and John Hoddinott (2000), "Economic Mobility and Poverty Dynamics in Developing Countries", *Journal of Development Studies*, 36: (6), 1-24.
- Baulch, Bob and Neil McCulloch (1998), "Being Poor and Becoming Poor: Poverty Status and Poverty Transitions in Rural Pakistan", Working Paper 79, Institute of Development Studies, University of Sussex.
- Campa, M. and R. Webb (1999), "Mobility and Poverty Dynamics in the 1990's", paper presented at IDS/IFPRI Workshop on Poverty Dynamics, April 1999, Institute of Development Studies, University of Sussex.
- Carter, Michael (1999), "Getting Ahead or Falling Behind? The Dynamics of Poverty in Post-Apartheid South Africa", mimeo., University of Wisconsin.
- Carter, Michael R. and Julian May (1999), "One Kind of Freedom: Poverty Dynamics in Post Apartheid South Africa", Staff Paper No. 427, University of Wisconsin-Madison, December.
- Canagarajah, Sudharshan and Saji Thomas (2001), "Poverty in a Wealthy Economy: The Case of Nigeria", *Journal of African Economies*, 10:(2), 143-173.
- Chambers R., Longdurst R., and Pacey A. (eds.) (1981), *Seasonal Dimensions in Rural Poverty*, Francis Pinter: London.
- Deininger, Klaus and John Okidi (2002), "Growth and Poverty Reduction in Uganda, 1992-2000: Panel data evidence", Economic Policy Research Council, Kampala, Uganda.
- Dercan, Stefan, and Pramila Krishnan (2000), "Vulnerability, Seasonality and Poverty in Ethiopia", *Journal of Development Studies*, 36: (6), 82-100.
- Gaiha, R. (1988), "Income Mobility in Rural India", *Economic Development and Cultural Change*, 36(2).
- Gaiha, R. and A.B. Deolaiker (1993), "Persistent, Expected and Innate Poverty: Estimates for Semi Arid Rural South India", *Cambridge Journal of Economics*, 17 (4), 409-21.
- Galasi, Peter (1998), "Income Inequality and Mobility in Hungary, 1992-96", Innocenti Occasional Papers: Economic and Social Policy Series 64, United Nations Children's Fund, International Child Development Centre, Florence.
- Galasi, P. and G. Kertesi, eds. (1996), *Labour Market and Economic Transition, Hungary 1986-1995*.
- Ghana Statistical Service (2000), *Poverty Trends in Ghana in the 1990s*.
- Gibson, John (2001), "Measuring Chronic Poverty without a Panel", *Journal of Development Economics*, 65, 243-266.
- Glewwe, Paul and Gillette Hall (1998), "Are some groups more vulnerable to macroeconomic shocks than others? Hypothesis tests based on panel data from Peru", *Journal of Development Economics*, 56: (1), 181-206.
- Grootaert, Christiaan and Ravi Kanbur (1995), "The Lucky Few Amidst Economic Decline: Distributional Change in Cote d'Ivoire as Seen Through Panel Datasets, 1985-88", *Journal of Development Studies*, 31: (4) 603-19.

- Grootaert, Christiaan, Ravi Kanbur and G-t Oh (1997), "The Dynamics of Welfare Gains and Losses: An Africa Case Study", *Journal of Development Studies*, 33: (5) 635-57
- Gunning, Jan. W., John Hoddinott, Bill Kinsey and Trudy Owens (2000), "Revisiting Forever Gained: Income Dynamics in the Resettlement Areas of Zimbabwe, 1983-1996", *Journal of Development Studies*, 36: (6) 131-55.
- Hoddinott, John, Trudy Owens and Bill Kinsey (1998), "Relief Aid and Development Assistance in Zimbabwe", report to United States Agency for International Development, Washington D.C.
- Hulme, David, Karen Moore, and Andrew Shepherd (2001), "Chronic Poverty: Meanings and analytical frameworks", CPRC Working Paper 2, IDPM, University of Manchester.
- Jalan, Jyotsna and Martin Ravallion (1998), "Transient poverty in post-reform rural China", *Journal of Comparative Economics*, 26: (2), 338-357.
- (1999), "Do Transient and Chronic Poverty in Rural China Share Common Causes?", Paper presented as IDS/IFPRI Workshop on Poverty Dynamics, IDS, April 1999.
- (2000), "Is transient poverty different? Evidence for rural China", *Journal of Development Studies*, 36: (6), 82-99.
- Jayaraman, R. and P. Lanjouw (1999), "The evolution of Poverty and Inequality in Indian Villages", *World Bank Research Observer*, 14: (1), 1-30.
- Lanjouw, P. and N. Stern (1991)," Poverty in Palanpur", *World Bank Economic Review*, 5: (1), 23-55.
- Lanjouw, P. and N. Stern (1993), "Agricultural Change and Inequality in Palanpur, 1957-84", in K. Hoff, A. Braverman and J. Stiglitz (eds), *The Economics of Rural Organization*, Oxford: Oxford University Press.
- McCulloch, Neil and Bob Baulch (1999), "Distinguishing the Chronically From the Transitory Poor - Evidence from Pakistan", Working Paper No. 97, Institute of Development Studies, University of Sussex
- (2000), "Simulating the Impact of Policy on Chronic and Transitory Poverty in Rural Pakistan", *Journal of Development Studies*, 36: (6), 100-130.
- McCulloch, Neil and Michele Calandrino (2001), "Poverty Dynamics in Rural Sichuan between 1991 and 1995", Poverty Research Programme, Institute of Development Studies.
- Mehta, Aasha Kapur and Amita Shah (2001), "Chronic Poverty in India: Overview Study", Chronic Poverty Research Centre Working Paper No. 7.
- Micklewright, J. and G. Nagy (1994), "Living Standards and Incentives in Transition: The Implications of UI Exhaustion in Hungary", *Journal of Public Economics*, 73: September.
- Morgan, S.L.(2000), "Richer and taller: stature and living standards in China, 1979-1995", *China Journal*, 44: July, 1-39.
- Mroz, T. and B. Popkin (1995), "Poverty and the Economic Transition in the Russian Federation", *Economic Development and Cultural Change*, 44 (1), 1-31.
- Muller, Christophe (2000), "Transient - Seasonal and Chronic Poverty of Peasants: Evidence from Rwanda", University of Nottingham, Discussion Papers in Economics No 00/9, April.
- Okidi, John and Gloria Kempaka (2002), "An Overview of Chronic Poverty and Development Policy in Uganda", Chronic Poverty Research Centre Working Paper No. 11, January.

- Pritchett, L. Suryahadi, A. and Sumarto, S. (2000), "Quantifying Vulnerability to Poverty: A Proposed Measure with Application to Indonesia, July 11, Washington D.C.: World Bank.
- Ravallion, Martin (1988), "Expected Poverty Under Risk-Induced Welfare Variability", *Economic Journal*, 98, 1171-1182.
- Republic of Rwanda (2002), "A Profile of Poverty in Rwanda", Ministry of Finance and Economic Planning, National Poverty Reduction Programme & Statistics Department, (February).
- Rodgers J.R. and J.L. Rodgers (1993), "Chronic Poverty in the United States", *Journal of Human Resources*, 28: (1), 25-54 Win.
- Scott, Christopher D. (2001), "Mixed Fortunes: A Study of Poverty Mobility among Small Farm Households in Chile, 1968-86", *Journal of Development Studies*, 36: (6) 155-181.
- Scott, Christopher D. and Julie Litchfield (1994), "Inequality, Mobility and the Determinants of Income among the Rural Poor in Chile, 1968-1986", STICERD Working Paper No. 53, London School of Economics.
- Skoufias, E., Asep Suryahadi and Sudarno Sumarto (2000), "Changes in Household Welfare, Poverty and Inequality During the Economic Crisis in Indonesia: Evidence from a Longitudinal Household Survey", *Bulletin of Indonesian Economic Studies*, 36 (2), 97-114.
- Speder, Zsolt (1998), "Fluidity and Segregation: The Dynamics of Poverty and the Living Conditions of the Poor in Hungary during the transformation." Paper prepared for the World Bank. Budapest University of Economic Sciences, Economic Policy Department, Household and Family Research Unit, Budapest.
- Stevens, A.H. (1994), "The Dynamics of Poverty Spells: Updating Bane & Ellwood", *American Economic Review - Papers and Proceedings*, 34-37.
- Suryahadi, Asep and Sudarno Sumarto (2001), "The Chronic Poor, The Transient Poor, and The Vulnerable in Indonesia Before and After the Crisis", SMERU Research Institute Working Paper, May.
- Swaminathan, M (1991a), "Measuring Mobility in Wealth: Some Estimates from a South Indian Village", *Oxford Bulletin of Economics and Statistics*, 53(2), 171-83.
- Swaminathan, M (1991b), "Gainers and Losers: A Note on Land and Occupational Mobility in a South Indian Village, 1977-85", *Development and Change*, 22(2), 261-77.
- Wlodzimierz, Okrasa (1999), "Who Avoids and Who Escapes from Poverty during the Transition? Evidence from Polish Panel Data, 1993-96", World Bank Policy Research Working Paper 2218, November.
- World Bank (1996), *Hungary: Poverty and Social Transfers*, A World Bank Country Study, Washington D.C.
- World Bank (1999), *Vietnam: Attacking Poverty*, Hanoi: World Bank.
- (2001), *Hungary: Long-Term Poverty, Social Protection, and the Labour Market, Volume 1: Main Report*, Poverty Reduction and Economic Management (ECSPE) Europe and Central Asia Region, April.
- Yaqub, Shafin. (2000), "Poverty Dynamics in Developing Countries", IDS Development Bibliography, University of Sussex, April.